

CLAIMS

What is claimed is:

5 1. A method of online advertising comprising the steps of:

storing in computer memory an advertisement display image assigned for display at a screen display location during a display period;

10 displaying the advertisement display image at the screen display location during the display period;

15 confirming, at a confirmation time during the display period, the displaying of the advertisement display image at the screen display location, wherein the confirming results in a determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time; and

20 recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

25 2. The method of claim 1 further comprising periodically repeating the steps of confirming the displaying of the advertisement display image and recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

3. The method of claim 1 further comprising calculating an amount to be charged for advertising in dependence upon the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

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4. The method of claim 1 wherein confirming the displaying of the advertisement display image comprises the further steps of:

intercepting a call to a bitblt routine;

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retrieving a bitmapped image ordered for display by the intercepted call; and

comparing the retrieved bitmapped image and the advertisement display image.

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5. The method of claim 4 wherein the comparing of the retrieved bitmapped image and the advertisement display image comprises comparing only a portion of the identified bitmapped image and a corresponding portion of the advertisement display image.

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6. The method of claim 1 wherein confirming the displaying of the advertisement display image comprises the further steps of:

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retrieving from computer display memory a bitmapped image displayed at the screen display location at the confirmation time; and

comparing the retrieved bitmapped image and the advertisement display image.

7. The method of claim 6 wherein the comparing of the retrieved bitmapped image and the advertisement display image comprises comparing only a portion of the identified bitmapped image and a corresponding portion of the advertisement display image.

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8. The method of claim 1 wherein

10 confirming the displaying of the advertisement display image at the screen display location in a determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time; and

15 recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time includes recording in computer memory the determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time.

20 9. The method of claim 8 further comprising calculating an amount to be charged for advertising in dependence upon the determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time.

25 10. The method of claim 1 wherein confirming the displaying of the advertisement display image comprises the further steps of:

retrieving from computer display memory, by use of operating system calls, a bitmapped image of an entire computer display screen upon which is displayed at least a portion of the advertisement display image;

5 finding, within the bitmapped image of an entire computer display screen, a bitmapped signature, wherein the bitmapped signature is contained also in the advertisement display image;

10 mapping, in dependence upon the bitmapped signature, a correspondence among pixels in the advertisement display image and pixels in the bitmapped image of an entire computer display screen; and

15 determining a portion of the advertisement display image that is actually displayed, further comprising comparing pixel-by-pixel the pixels of the advertisement display image and corresponding pixels of the bitmapped image of an entire computer display screen.

20 11. The method of claim 10 wherein determining a portion of the advertisement display image that is actually displayed is carried out by comparing pixel-by-pixel only a comparison portion of the pixels of the advertisement display image and corresponding pixels of the bitmapped image of an entire computer display screen, the comparison portion being a sufficient number of pixels to support a statistically reliable determination of the portion of the advertisement display image that is actually displayed.

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12. A system of online advertising comprising:

means for storing in computer memory an advertisement display image
5 assigned for display at a screen display location during a display period;

means for displaying the advertisement display image at the screen display
location during the display period;

10 means for confirming, at a confirmation time during the display period, the
displaying of the advertisement display image at the screen display location,
wherein the confirming results in a determination whether the advertisement
display image is fully displayed at the screen display location at the
confirmation time; and

15 means for recording in computer memory the determination whether the
advertisement display image is fully displayed at the screen display location at
the confirmation time.

20 13. The system of claim 12 further comprising means for periodically repeating
the steps of confirming the displaying of the advertisement display image and
recording in computer memory the determination whether the advertisement
display image is fully displayed at the screen display location at the
confirmation time.

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14. The system of claim 12 further comprising means for calculating an amount to be charged for advertising in dependence upon the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

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15. The system of claim 12 wherein means for confirming the displaying of the advertisement display image further comprises:

means for intercepting a call to a bitblt routine;

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means for retrieving a bitmapped image ordered for display by the intercepted call; and

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means for comparing the retrieved bitmapped image and the advertisement display image.

16. The system of claim 15 wherein the means for comparing of the retrieved bitmapped image and the advertisement display image comprises means for comparing only a portion of the identified bitmapped image and a corresponding portion of the advertisement display image.

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17. The system of claim 12 wherein means for confirming the displaying of the advertisement display image further comprises:

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means for retrieving from computer display memory a bitmapped image displayed at the screen display location at the confirmation time; and

means for comparing the retrieved bitmapped image and the advertisement display image.

18. The system of claim 17 wherein the means for comparing of the retrieved bitmapped image and the advertisement display image comprises means for comparing only a portion of the identified bitmapped image and a

corresponding portion of the advertisement display image.

19. The system of claim 12 wherein

10 means for confirming the displaying of the advertisement display image at the screen display location in a determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time; and

15 means for recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time includes means for recording in computer memory the determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time.

20. The system of claim 19 further comprising means for calculating an amount to be charged for advertising in dependence upon the determination that the advertisement display image is only partially displayed at the screen display

25 location at the confirmation time.

21. The system of claim 12 wherein means for confirming the displaying of the advertisement display image further comprises:

means for retrieving from computer display memory, by use of operating
5 system calls, a bitmapped image of an entire computer display screen upon
which is displayed at least a portion of the advertisement display image;

10 means for finding, within the bitmapped image of an entire computer display
screen, a bitmapped signature, wherein the bitmapped signature is contained
also in the advertisement display image;

15 means for mapping, in dependence upon the bitmapped signature, a
correspondence among pixels in the advertisement display image and pixels in
the bitmapped image of an entire computer display screen; and

20 means for determining a portion of the advertisement display image that is
actually displayed, further means for comprising comparing pixel-by-pixel the
pixels of the advertisement display image and corresponding pixels of the
bitmapped image of an entire computer display screen.

22. The method of claim 21 wherein means for determining a portion of the
advertisement display image that is actually displayed is implemented by use
of means for comparing pixel-by-pixel only a comparison portion of the pixels
of the advertisement display image and corresponding pixels of the bitmapped
25 image of an entire computer display screen, the comparison portion being a
sufficient number of pixels to support a statistically reliable determination of
the portion of the advertisement display image that is actually displayed.

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23. A computer product program of online advertising comprising:

5 a recording medium;

10 means, recorded on the recording medium, for storing in computer memory an advertisement display image assigned for display at a screen display location during a display period;

15 means, recorded on the recording medium, for displaying the advertisement display image at the screen display location during the display period;

20 means, recorded on the recording medium, for confirming, at a confirmation time during the display period, the displaying of the advertisement display image at the screen display location, wherein the confirming results in a determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time; and

25 means, recorded on the recording medium, for recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

24. The computer product program of claim 23 further comprising means, recorded on the recording medium, for periodically repeating the steps of confirming the displaying of the advertisement display image and recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time.

25. The computer product program of claim 23 further comprising means, recorded on the recording medium, for calculating an amount to be charged for advertising in dependence upon the determination whether the advertisement display image is fully displayed at the screen display location at 5 the confirmation time.

26. The computer product program of claim 23 wherein means, recorded on the recording medium, for confirming the displaying of the advertisement display image further comprises:

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means, recorded on the recording medium, for intercepting a call to a bitblt routine;

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means, recorded on the recording medium, for retrieving a bitmapped image ordered for display by the intercepted call; and

means, recorded on the recording medium, for comparing the retrieved bitmapped image and the advertisement display image.

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The computer product program of claim 26 wherein the means, recorded on the recording medium, for comparing of the retrieved bitmapped image and the advertisement display image comprises means, recorded on the recording medium, for comparing only a portion of the identified bitmapped image and a corresponding portion of the advertisement display image.

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28. The computer product program of claim 23 wherein means, recorded on the recording medium, for confirming the displaying of the advertisement display image further comprises:

means, recorded on the recording medium, for retrieving from computer display memory a bitmapped image displayed at the screen display location at the confirmation time; and

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means, recorded on the recording medium, for comparing the retrieved bitmapped image and the advertisement display image.

29. The computer product program of claim 28 wherein the means, recorded on the recording medium, for comparing of the retrieved bitmapped image and the advertisement display image comprises means, recorded on the recording medium, for comparing only a portion of the identified bitmapped image and a corresponding portion of the advertisement display image.

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15 30. The computer product program of claim 23 wherein

means, recorded on the recording medium, for confirming the displaying of the advertisement display image at the screen display location in a determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time; and

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means, recorded on the recording medium, for recording in computer memory the determination whether the advertisement display image is fully displayed at the screen display location at the confirmation time includes means, recorded on the recording medium, for recording in computer memory the determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time.

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31. The computer product program of claim 30 further comprising means, recorded on the recording medium, for calculating an amount to be charged for advertising in dependence upon the determination that the advertisement display image is only partially displayed at the screen display location at the confirmation time.

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32. The computer product program of claim 23 wherein means, recorded on the recording medium, for confirming the displaying of the advertisement display image further comprises:

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means, recorded on the recording medium, for retrieving from computer display memory, by use of operating system calls, a bitmapped image of an entire computer display screen upon which is displayed at least a portion of the advertisement display image;

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means, recorded on the recording medium, for finding, within the bitmapped image of an entire computer display screen, a bitmapped signature, wherein the bitmapped signature is contained also in the advertisement display image;

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means, recorded on the recording medium, for mapping, in dependence upon the bitmapped signature, a correspondence among pixels in the advertisement display image and pixels in the bitmapped image of an entire computer display screen; and

means, recorded on the recording medium, for determining a portion of the advertisement display image that is actually displayed, further comprising means for comprising comparing pixel-by-pixel the pixels of the advertisement display image and corresponding pixels of the bitmapped image of an entire computer display screen.

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33. The method of claim 32 wherein means for determining a portion of the advertisement display image that is actually displayed is implemented by use of means, recorded on the recording medium, for comparing pixel-by-pixel only a comparison portion of the pixels of the advertisement display image and corresponding pixels of the bitmapped image of an entire computer display screen, the comparison portion being a sufficient number of pixels to support a statistically reliable determination of the portion of the advertisement display image that is actually displayed.

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